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The perceptiveness about the preventable measures and complications of viral hepatitis in Arar City-KSA

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Abstract

Aim: This study is aimed to assess the level awareness of the risk factors and complications of viral hepatitis among the residents of Arar city - KSA.

Material and Methods: A pre-designed questionnaire was used, which was filled by willing participants who were residents of Arar city, KSA. The questionnaire included fourteen questions about factors, which increase the risk of HBV & HCV infection, and four questions about the complication of HBV, HCV and HEV infection. The questionnaire also included three questions about risk factors of hepatitis A and E virus infection. The participants have been divided into two categories. Category 1 included people with a school education, while category 2 included persons with a university education.

Results: A total of 482 willing participants completely filled the questionnaire, of which 79.5% were males and 20.5 % females. Among these participants, 78.8% had a university education, while 21.2% belonged to category 1 (school level education). Awareness of the risk factors for HBV and HCV infection is better among the people with a university education than among people with lower education level. Awareness of the risk of spreading HBV and HCV after needle-stick injury (needle of used syringes), close contact with infected person's blood and body fluids, and from an infected mother to a baby is low in the significant majority of persons from both categories.

Discussion: Awareness of certain factors, which increase the risk of transmission of HBV and HCV is deficient among people, and awareness of these factors needs to be raised in the community.

Keywords

Hepatitis C virus; Hepatitis B virus; Awareness; Risk factors

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Introduction

Hepatitis is an inflammatory condition of the liver in which hepatocytes are damaged by injurious agents leading to necrosis and apoptosis. Hepatitis B virus (HBV) and hepatitis C virus (HCV) are common causative agents of hepatitis. HBV and HCV affect more than a billion persons around the whole world and cause more than one million deaths every year [1,2]. The HCV infection has been found to be more common compared to HBV when screening asymptomatic persons before blood donation and cataract surgery [3,4]. A study conducted on the diagnosed cases of tuberculosis revealed that 7.75 % of these patients had HCV infection [5]. Damage to liver cells by these pathogens may lead to fulminant hepatitis, chronic hepatitis, cirrhosis and cancer.

The HBV and HCV are transmitted through the use of contaminated syringe needles, unsafe barber razors, needle stick injuries, intravenous drug abuse, sexual contact, surgery with contaminated equipment, unsafe transfusion of blood and blood products, and vertical transmission from mother to child [6-8]. Healthcare providers and patients attendants may also be at greater risk of acquiring the infection, as these viruses may be present in many body fluids of patients, such as blood, saliva, semen, vaginal fluid and effusions.

Other causative agents of viral hepatitis include hepatitis A virus (HAV) and hepatitis E virus (HEV), which are spread through drinking contaminated water or ingestion of contaminated food. HAV and HEV usually cause self-limited infections, but HEV infection during pregnancy is associated with high mortality.

Awareness of the preventable risk factors and complications of viral hepatitis may reduce the spread of infection and decrease mortality and morbidity due to liver diseases in the community. This study is aimed to assess the awareness level about the risk factors and complications of viral hepatitis and to compare the level of knowledge with respect to the educational level of the residents.

Material and Methods

The study was approved by the local committee of bioethics. A pre-designed questionnaire was used, which was filled out by the willing participants from the Arar city – KSA. A convenient sample method was employed to select participants. The questionnaire included items to collect data about age, educational level and 14 questions about the factors, which increase the risk of HBV and HCV infection and four questions about the complication of HBV, HCV and HEV infection. The questionnaire also included three questions about risk factors of hepatitis A and E virus. The participants were divided into two categories. Category 1 included persons with a school (primary and secondary) education, while category 2 included people with a university education. The data were analyzed using a computer.

Results

A total of 482 willing participants among the residents of Arar city, KSA completely filled the questionnaire, of which 79.5% were males and 20.5 % were females. Among these participants, 78.8% had a university education (category 2), while 21.2% belonged to category 1 (primary and secondary

Table 1. Relationship between the participants' educational level and their knowledge regarding the risk factors of HBV and HCV infection

Do you think that the following increases the risk of HBVand HCV infection?	Education Level	
	Category 1 (Primary & Secondary School education) n (%)	Category 2 (University education) n (%)
Needle-stick injury (needle of used syringes)		
• No	12 (11.8)	21 (5.5)
• I don't know	57 (55.9)	185 (48.7)
• Yes	33 (32.3)	174 (45.8)
Total	102 (100)	380 (100)
Unsafe transfusion of blood and blood products (without screening for hepatitis viruses)		
• No	6 (5.9)	12 (3.2)
• I don't know	33 (32.3)	91 (23.9)
• Yes	63 (61.8)	277 (72.9)
Total	102 (100)	380 (100)
Unsafe injections (needles may be contaminated with blood of patients with viral hepatitis)		
• No	12 (11.8)	14 (3.7)
• I don't know	38 (37.2)	92 (24.2)
• Yes	52 (51.0)	274 (72.1)
Total	102 (100)	380 (100)
Unsafe barber razors (Use of razors after infected persons)		
• No	17 (16.7)	25 (6.6)
• I don't know	28 (27.4)	87 (22.9)
• Yes	57 (55.9)	268 (70.5)
Total	102 (100)	380 (100)
Use of Tooth brushes of infected persons		
• No	15 (14.7)	45 (11.8)
• I don't know	35 (34.3)	115 (30.3)
• Yes	52 (51.0)	220 (57.9)
Total	102 (100)	380 (100)
Unsafe dental instruments (not properly sterilized)		
• No	9 (8.8)	21 (5.5)
• I don't know	36 (35.3)	99 (26.1)
• Yes	57 (55.9)	260 (68.4)
Total	102 (100)	380 (100)
Sexual contact with infected person		
• No	19 (18.6)	42 (11.1)
• I don't know	35 (34.3)	137 (36.0)
• Yes	48 (47.1)	201 (52.9)
Total	102 (100)	380 (100)
Close contact with infected person's blood and body fluids		
• No	23 (22.5)	67 (17.6)
• I don't know	36 (35.3)	140 (36.9)
• Yes	43 (42.2)	173 (45.5)
Total	102 (100)	380 (100)
Infected mother (from infected mother to baby)		
• No	20 (19.6)	43 (11.3)
• I don't know	48 (47.1)	189 (49.7)
• Yes	34 (33.3)	148 (39.0)
Total	102 (100)	380 (100)
Tattooing with unsafe needles		
• No	17 (16.7)	30 (7.9)
• I don't know	33 (32.3)	131 (34.5)
• Yes	52 (51.0)	219 (57.6)
Total	102 (100)	380 (100)

Pedicure with unsafe instruments		
• No	16 (15.7)	41 (10.8)
• I don't know	46 (45.1)	173 (45.5)
• Yes	40 (39.2)	166 (43.7)
Total	102 (100)	380 (100)
Nose and ear piercing with unsafe needles		
• No	18 (17.6)	32 (8.4)
• I don't know	38 (37.3)	156 (41.1)
• Yes	46 (45.1)	192 (50.5)
Total	102 (100)	380 (100)
Lack of use of gloves when handling the body fluids of infected person		
• No	27 (26.5)	52 (13.7)
• I don't know	36 (35.3)	156 (41.0)
• Yes	39 (38.2)	172 (45.3)
Total	102 (100)	380 (100)
Lack of vaccination for hepatitis B virus		
• No	23 (22.6)	23 (6.1)
• I don't know	40 (39.2)	141 (37.1)
• Yes	39 (38.2)	216 (56.8)
Total	102 (100)	380 (100)

Table 2. Relationship between participants' educational level and their knowledge of complications of HBV, HCV and HEV infections

Do you know that the following is a complication of Hepatitis B Virus (HBV) and Heptitis C virus (HCV) infections?	Education Level	
	Category 1 (Primary & Secondary School education)	Category 2 (University education)
1. Liver failure		
• No	17 (16.7)	23 (6.0)
• I don't know	28 (27.4)	142 (37.4)
• Yes	57 (55.9)	215 (56.6)
Total	102	380
2. Cirrhosis		
• No	7 (6.9)	27 (7.1)
• I don't know	40 (39.2)	161 (42.4)
• Yes	55 (53.9)	192 (50.5)
Total	102	380
3. Liver cancer		
• No	15 (14.7)	40 (10.5)
• I don't know	54 (52.9)	204 (53.7)
• Yes	33 (32.4)	136 (35.8)
Total	102	380
Hepatitis E infection during pregnancy is associated with high mortality		
• No	8 (7.8)	16 (4.2)
• I don't know	27 (26.5)	130 (34.2)
• Yes	67 (65.7)	234 (61.6)
Total	102	380

school education). Participants with a higher level of education (University education level) had significantly higher percentage of those who knew the majority of risk factors that increases the risk of HBV and HCV virus infection, compared with people with a lower education level (primary and secondary school education). The majority of persons in both categories are unaware of the risk of spreading of HBV and HCV after needle-stick injury (needle of used syringes), close contact with infected person's blood and body fluids and from an infected mother to a baby. The results are depicted in Table 1.

A significant number of participants in both categories are aware of the risk factors, which increase the chance of transmission of HAV and HEV and subsequent complications of HBV, HCV and HEV infections. The results are shown in Tables 2 and 3.

Table 3. Relationship between participants' educational level and their knowledge of risk factors of Hepatitis A and E virus infections

Do you think that the following increases the risk of Hepatitis A Virus and Hepatitis E virus infection	Education Level	
	Category 1 (Primary & Secondary School education)	Category 2 (University education)
1. Drinking polluted water		
• No	11 (10.8)	34 (9.0)
• I don't know	30 (29.4)	130 (34.2)
• Yes	61 (59.8)	216 (56.8)
Total	102	380
2. Eating undercooked contaminated food		
• No	20 (19.6)	37 (9.7)
• I don't know	33 (32.4)	144 (37.9)
• Yes	49 (48.0)	199 (52.4)
Total	102	380
3. Lack of handwashing		
• No	12 (11.7)	40 (10.5)
• I don't know	38 (37.3)	145 (38.2)
• Yes	52 (51.0)	195 (51.3)
Total	102	380

Discussion

The analysis of the present study revealed that the awareness level regarding the factors that increase the risk of HBV and HCV infections is relatively better in people with higher education level. But there are certain risk factors, about which the majority of the community has a low awareness level, particularly, about a needle stick injury (needle of used syringes), close contact with an infected person's blood and body fluids, and from an infected mother to a baby.

A study was conducted in KSA in 2017 to assess knowledge, attitude and practice (KAP) on HBV among Internet Users in Taif city. The study found that only 20.5% had satisfactory knowledge, whereas the urban residency, university education and working in the medical field are significantly associated with satisfactory knowledge [9]. Another KAP study was done in the community in 2017, which revealed that most of them are well aware of hepatitis B transmission, the definition, symptoms and complications [10]. A recent study, which was done in 2020 to assess the awareness about the hepatitis C virus among medical students in Dammam city, found that more than 50% of them had fair knowledge about HCV screening, clinical presentation, complications and treatment, while 75% of students had poor knowledge about HCV transmission [11].

A study was done in Yemen among the medical laboratory and nursing students. The results of the study revealed that the students are poorly informed about HBV and HCV [12].

Other studies have also revealed low public awareness of HBV,

especially modes of transmission, screening, vaccination and complications [13,14]. Higher educational level was a significant predictor of higher level of knowledge about HBV [15].

Conclusion: There is insufficient awareness about the certain factors, which increase the risk of HBV and HCV transmission. The findings of the present study raise the need for dissemination of knowledge regarding the factors that facilitate the spread of hepatitis viruses from infected cases to healthy persons in the community. In this regard, print, electronic and social media may be used for better public awareness about these pathogens along with the other possible means.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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Conflict of interest

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